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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/743,097
Filing Date: December 23, 2003
Appellant(s): VANDEWINCKEL ET AL.

Jori Krischke
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 20 September 2006 appealing from the Office action mailed 31 March 2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct. No amendments after final were submitted. Appellant's submitted evidence in the form of references with the Brief, which is summarized in Appendix B of the Brief (p. B-1). Only the Rule 132 declaration and the US reference to Combes (US 6,673,501), items 1 & 2 in the Appendix, are of record. Items 3-5 were never submitted and applicants were advised of this in the Advisory Action of 12 July 2006. This evidence (items 3-5) is not admissible per 37 CFR 41.33(d)(2) because it is first submitted at the filing of the Brief. The Examiner recognizes that submission of evidence to support an argument need not be in the form of an IDS, but the relied upon evidence was never submitted before Appeal and applicants were made aware of this before Appeal was taken.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

The following is a listing of the evidence (e.g., patents, publications, Official Notice, and admitted prior art) relied upon in the rejection of claims under appeal.

US Patent 6,673,501 Combes 6 January 2004

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-19 specify a "cohesion" of the toner particles of from about 55 to about 98 %. Cohesion is a numerical value. The claims do not provide any definition of the term or of how to calculate or measure this value. As a result, the artisan would look to the specification for guidance. The specification guidance does not describe the manner of determining the cohesion value with sufficient particularity so that the artisan would be reasonably apprised of the claimed "cohesion" value.

Cohesion (i.e., cohesivity) is discussed in the specification in ¶ [0034] as being measured by placing a known amount of toner (e.g., two grams) on a sieve with three screens having meshes of, for example, 53 microns, 45 microns, and 38 microns in order from top to bottom. The sieve is shaken under conditions, such as 115 seconds at a 1 millimeter vibration amplitude. The toner cohesion value is related to the amount of toner remaining on the screens at the end of the time. A cohesion value of 100% corresponds to all of the toner remaining on the top screen at the end of the vibration step and a cohesion value of zero corresponds to all of the toner passing through all three screens, that is, no toner remaining on any of the three screens pt the end of the vibration step. The higher the cohesion values the lesser the flowability of the toner. The cohesion value appears to be a result of not only the toner but the mesh sizes of the sieves, the time of vibration, the amplitude of vibration, and the number of sieves, and the manner in which the value is calcualted.

The claims as presented are indefinite because it is unclear how the cohesion value is actually calculated. It is unclear how much of the toner needs to retained on any one, all, or some combination of screens in order to obtain a cohesion value according to the claims. For example, if 50 % of the toner is retained on a 38 μm screen and 25% of the toner is retained on the 45 μm screen, is the cohesion value 25%, 50%, or 75%? It is unclear if different screen sizes can be used (e.g., 100 microns or 20 microns) because the specification only provides examples of useful mesh sizes, not requirements or guidance. Further, the length of time of shaking and intensity would affect the amount of toner remaining on each screen because more vigorous or lengthy shaking would break apart more toner aggregates while less shaking would not.

The claims do not particularly point out and distinctly claim the invention as required by this section of code. As a result, the claims are indefinite.

(10) Response to Argument

On page 8 of the Brief, appellants take the position that the method for determining cohesion is definite because the of the passage in ¶ [0034] referenced above. In this passage, examples of useful seize sizes, number of seize screens, toner amounts, time of vibration, and vibration amplitudes are discussed. However, the characteristics of vibration time, toner amount, vibration amplitude, and screen size are all given in the specification as examples. The specification describes these characteristics by qualifiers "such as", "for example", and "e.g.". The specification description does not particularly point out what the vibration time, toner amount, vibration amplitude, and screen sizes are. Rather it provides non-limiting examples. The person of ordinary skill would not see the described features as limiting the cohesion measurement. Rather, the skilled artisan would see these as examples of parameters that can be varied or changed. Thus the specification does not provide a reasonable guidance to these parameters or the meaning of the values for "cohesion" as specified in the claims.

Appellants also state that the values of cohesion are calculated by a well-known formula (Brief p. 9). No formula is disclosed in the specification. It appears that the value would be calculated by some combination the amount of the toner retained on any one, all, or some combination of screens in order to obtain a cohesion value according to the claims. The Examiner is in agreement that a cohesion value of 100% corresponds to all of the toner remaining on the top screen at the end of the vibration step, i.e., no toner passes through all three screens, and a cohesion value of zero corresponds to all of the toner passing through all three screens. However, what is not clear from the specification is how the cohesion value is determined when less than all of the toner is retained on the top screen or when not all toner passes through all the screens.

Appellants rely on the Rule 132 declaration filed on to supply the missing disclosure. In this disclosure, declarant relies on references that use a formula cohesion = 50A + 30B + 10C, which A, B, and C each refer to the mass of toner on the respective three screens from top to bottom. Only one of the references cited on Brief page 9 was made of record before filing of the Appeal (i.e., Combes). This reference states in column 48, lines 21-44, passage states,

> "The particle flow values of the toner particles were measured with a Hosokawa Micron Powder tester by applying a 1 millimeter vibration for 90 seconds to 2 grams of the toner particles on a set of stacked screens. The top screen contained 150 micron openings, the middle screen contained 75 micron openings, and the bottom screen contained 45 micron openings. The percent cohesion is calculated as follows:
>
> % cohesion=50A+30B+10C
>
> wherein A is the mass of toner remaining on the 150 micron screen, B is the mass of toner remaining on the 75 micron screen, and C is the mass of toner remaining on the 45 micron screen. (The equation applies a weighting factor proportional to screen size.) This test method is further described in, for example, R. Veregin and R. Bartha, Proceedings of IS&T 14th International Congress on Advances in Non-Impact Printing Technologies, pg 358-361, 1998, Toronto, the disclosure of which is totally incorporated herein by reference. For the toners, the input energy applied to the apparatus of 300 millivolts was decreased to 50 millivolts to increase the sensitivity of the test. The lower the percent cohesion value, the better the toner flowability. "

Rather than resolve the issues raised by the Examiner by showing reasonable guidance in the art, this citation further shows that the claims are indefinite. In the Combes document cohesion's vibration time is different from that used in the specification. The screen sizes are also significantly different: 150, 75, and 45 μm in the Combes reference; 53, 45, and 38 μm in the specification. Clearly different sized screens are known to be used in the art as shown by the specification and Combes, and the artisan would expect far different amounts of the toner to be retained on Combes screens (e.g., 150 μm screen) as compared to any of the screens in the specification (e.g., 38 μm screen). A toner or aggregate of toner that would easily pass through Combes' 150 μm and 75 μm mesh screens could be retained on the top screen for the examplative screens in the specification. For example, a toner aggregate of 55 μm would reside

of Combes' bottom screen but would be retained on the specification's exemplary top screen. This would appear to give a different result because of the different screen sizes.

Appellants are understood by the Examiner to at least some degree agree with this position noting the footnote at the bottom of page 9. Here appellants state,

"There is certainly a correlation between screen sizes in conducting the test. However, once appropriate sizes are selected, which sizes are described in the present specification, then one understands to apply the known cohesion equation to the results obtained using such set of screens."

This passage appears to be acknowledging that the sizes of the screens are critical. Certainly once a set of screens are chosen the results will be reliable between tests. However, there is no definition of the test in the claims or the specification. The example of useful screen sizes is not binding on the claims, different screen sizes would be expected by the artisan to give different results.

Although the specification does not define how to calculate cohesion %, Combes provides a formula for determining this value for the purposes of that reference's invention, as noted above. There is no indication in the specification that the amount of toner on each screen is measured and multiplied by a factor as in Combes, and there is no indication that the formula of Combes, which is used for different screen sizes, can be used with the specification exemplary screen sizes when measuring cohesion. If the formula in Combes were applied to this situation and 2 g of sample all having a diameter between 55 μm and 65 μm were tested for cohesion, the numerical value for Combes would be 20% (i.e., 50 x 0 + 30 x 0 + 10 x 2). If the same formula were applied to the exemplary screens of the instant specification, the numerical cohesion value would be 100%. Clearly the size of the screens and the formula used to determine cohesion are critical.

Combes also teaches that a weighting factor proportional to screen size is used to determine cohesion. There is no reason to expect that Combes weighting factors for significantly different screen sizes (i.e, 150, 75, and 45 μm in the Combes reference) and would be applied to the instant specification (53, 45, and 38 μm screen size).

On page 10 of the Brief appellants stress that the formula of Combes (and other art) must be used because in the instant specification because if all the toner is held on the first screen and the sample is of 2 g, then the first term must by 50 x A (the mass of toner of screen A). The Examiner disagrees. Common sense tells us that if the toner is all retained on the first screen then the cohesion value is 100%. No mathematical insight is needed. However, even if the first value is 50 x A as asserted, there is no reason to believe that the other multipliers for the B and C values are 30 and 10, respectively.

The specification does not reference Combes or incorporate the document (or the other documents cited) by reference for its measurement of cohesion. Combes cannot be relied upon to show that the determination of cohesion is well known in the art and does not render the claims definite, particularly where the characteristics of measurement are different between the reference and the specification.

Hagiwara was cited previously only to show that cohesion is known to be treated differently by different inventions for different toners. This reference shows that the uniformity asserted by appellants is not recognized by the art.

The claims as presented are indefinite because they fails to particularly point out the invention.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

CHRISTOPHER RODEE
PRIMARY EXAMINER

cdr
17 November 2006

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